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TID-5/65  
6 January 1965

MEMORANDUM FOR: Assistant for Plans and Development, NPIC

SUBJECT: Development of an Analytical Plotter/3 (AP/3)

1. The purpose of this memorandum is to recommend the development of an instrument that will enable TID to respond to requirements levied upon it for plots, profiles, distances, and exploitation of terrestrial photography. Current instrumentation within the Technical Analysis Branch, TID, does not enable TID to satisfy these requirements. [redacted] analytical plotter, AP/2, and its successor, the AP/C, are the only instruments that approach the capabilities needed by TID. The development of an [redacted] AP/3 instrument, incorporating the most desirable features of the AP/2 and the AP/C plus the development of certain additional features to meet specific TID requirements is requested.

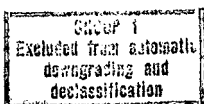
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2. It is recommended that the AP/3 be developed to have the capability to meet the following requirements levied upon TID.

- a. To enable delineation of accurate, large scale plots of complexes complete with contours. By large scale complexes is meant AE sites, launching pads, etc.
- b. To permit, on instant recall, the determination of distances and heights of objects.
- c. To determine graphically problems in inter-visibility and permit a graphical presentation of profiles.
- d. To enable the exploitation of photography, regardless of format, camera characteristics or orientation including those encountered in terrestrial photography.

Declass Review by NGA.



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e. To permit the compilation of topographic or other special purpose maps i.e., escape and evasion and drop zone maps.

f. To permit the full exploitation of present and future high resolution photography.

3. In order to achieve the capability to meet the requirements levied upon TID the following features should be incorporated in the development of the AP/3:

a. The resolution of the optical system should be maximized; the AP/2 is capable of 100 l/mm which is considered insufficient to meet high resolution capabilities of present and future camera reconnaissance systems.

b. The magnification should be maximized in order to enable the exploitation of high resolution photography. The AP/2 and AP/C are magnification limited.

c. The AP/C has the capability of determining on instant recall the distance between objects and the heights of objects; this capability should be included in the development of the AP/3.

d. The AP/C has the capability of exploiting all photographic orientations including those encountered in terrestrial photography; it is desirable to include such orientation capabilities in the development of the AP/3.

e.  are presently developing an image correlation device (ICD) for the AP/2 and AP/C. It is recommended that the advantages of the ICD be investigated for possible inclusion to the development of the AP/3.

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X1 f. [ ] development of the AP/C followed that of the AP/2. In the development of the AP/C improvements in design and operation were realized e.g., servo motors were used instead of synchros, refinement of pulse rates, etc. Accordingly, it is recommended that all improvements realized in the AP/C be considered for inclusion in the development of the AP/3 as well as the desirable features of the AP/2.

g. Investigate the feasibility of incorporating modern, high-speed, input-output procedures and techniques.

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Chief, Technical Intelligence Division

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